

CONVERTIBLE TRAY BLANK AND CONTAINER

FIELD OF THE INVENTION

This invention relates generally to containers and container blanks and, more specifically to convertible cap and tray type containers and tie sheets for bulk products.

BACKGROUND OF THE INVENTION

Shipping goods in bulk is known in the art. In fact, an entire industry of club stores and warehouse stores has developed to provide customers with cost savings associated with large volume purchases. Often, the goods are shipped in bulk to the various stores. Often the bulk shipments are shipped on pallets. These bulk goods are often fairly unstable, especially as shoppers mill through the goods. As a result, a large quantity of blank containerboard material is used to try and stabilize the goods. Typically, the stabilization is achieved by blank, non-die cut containerboard material placed in flat sheets within the goods. As the goods are purchased, the successive layers of tie sheets are removed from the bulk pile of goods.

This practice creates a business problem. The blank tie sheets have no other utility. Consequently, there is a considerable amount of expense associated with tie sheet that work well to stabilized bulk shipments, but have no other utility. A specific utility not met by the blank tie sheet is the ability to convert the tie sheet into individual carrying trays. Also, the blank tie sheet is not functional as a cap or bottom tray for the bulk goods.

SUMMARY OF THE INVENTION

The present invention is directed to a convertible tray container and blank. In accordance with the present invention, a single sheet of foldable material is cut and scored to define container blank. The blank includes a plurality of substantially identical and separable units, each unit includes a bottom panel, a pair of first opposed side panels attached to the bottom panel and a pair of second opposed side panels attached to the bottom panel. Additionally, a corner flap is connected with each of the first opposed side panels. Further, a locking tab is connected with the corner flap. Still further a side panel slot formed in the second opposed side panels and a bottom stacking slot is formed in the bottom panel.

The present invention further includes a container having a bottom panel with a pair of first opposed side panels connected with the bottom panel and a pair of second opposed side panels connected with the bottom panel. A corner flap is connected with each of the first opposed side panels. Also, a locking tab is connected with the corner flap. Further, the container includes a bottom slot is formed in the bottom panel.

a side panel slot formed in the second opposed side panels, said locking tab passing through said side panel slot and engaging said bottom slot.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred and alternative embodiments of the present invention are described in detail below with reference to the following drawings.

5 FIGURE 1 is a plan view of a single piece container blank formed according to the present invention;

FIGURE 2 is a plan view of an aspect of the container blank formed according to the present invention;

10 FIGURE 3 is a perspective view of a partially assembled collection of units of a container formed in accordance with the present invention;

FIGURE 4 is perspective view of a formed container made in accordance with the present invention;

FIGURE 5 is a perspective view of a pair of convertible tray containers in use; and,

15 FIGURE 6 is perspective view of another aspect of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention will now be described with reference to the accompanying drawings. The present invention is directed to a multi-section container cap that may be used as a unitary piece or be broken down into separate, identical units. By way of overview and with reference to FIGURES 1-8, one suitable embodiment of the present invention includes a single piece blank 20 of foldable material arranged to form a convertible tray container 50. Specific details of the blank 20 and convertible tray container 50 are described with more particularity below.

25 The blank 20 is cut scored, perforated or otherwise formed to include a plurality of panels which, when assembled, create the convertible tray container 50 of the present invention. Wherever possible the same number is used in related panels of the blank 20 and convertible tray container 50. More specifically, in all FIGURES, like numbers indicate like parts. Additionally, cuts are shown as solid lines, score lines as dashed lines and lines of perforation as broken lines.

30 For the purposes of this description herein, the downward direction is defined as the direction perpendicular to a bottom panel 22 that corresponds to the outer surface of the bottom panel 22 when the convertible tray container 50 has been erected. The upward direction is defined as the direction perpendicular to the bottom panel 22 that corresponds to the inner surface of the bottom panel 22 when the convertible tray container 50 has been erected.

The blank 20 and convertible tray container 50, as shown in the FIGURES are made from any suitable material used in shipping. By way of non-limiting example, the present invention may be constructed from containerboard, paperboard, fiberboard, corrugated containerboard, plastics or combinations thereof. Further, any other foldable material may be used to create the present invention.

Referring now to FIGURES 1 and 2, the blank 20 includes a plurality of substantially identical units 23 that are separable along a separation lines 34. For simplicity purposes only, a single unit 21 will be described. However, it will be appreciated that any discussion of one unit is equally applicable the all units 23 and to the convertible tray container.

Each unit 23 includes a bottom panel 22 and a first pair of opposed side panels 24, 24' attached to the bottom panel 22. Additionally, a second pair of opposed side panels 26, 26' are attached to the bottom panel 22, intermediate the first pair of opposed side panels 24, 24'. The relative length of the first pair of opposed side panels 24, 24' and the second pair of opposed side panels 24'', 24''' may be equal or unequal. As such, the blank 20 may be configured such that each unit 23 is either substantially square or substantially rectangular in geometry.

In one embodiment, each unit 23 also includes a corner flap 28 attached to opposed ends of each of the first pair of opposed side panels 24, 24'. Additionally, a locking tab 30 is attached to the corner flap 28. The second pair of side panels 26, 26' includes side slots 42 that are suitably sized to accept the locking tab 30 when the blank 20 is formed into the container 50. Additionally, the bottom panel includes a bottom slot 40, that works in conjunction with the side slot 42 to receive the locking tab 30, as best illustrated in FIGURE 4. Still further, the bottom panel may optionally include a bottom stacking slot 48. Those skilled in the art will appreciate the bottom stacking slot 48 may be at any orientation relative to the first and second pair of opposed side panels, 24, 24' and 26, 26' respectively. Also, the bottom stacking slot 48 may be of any size or design. The principle purpose behind the stacking slot, among other things, is to provide an attachment base for internal support structure such as divider panels and the like.

FIGURES 2 & 3 illustrate certain aspects of the present invention. Specifically, the single blank 20 may be divided into a plurality of individual units 23. As best seen in FIGURE 2, each unit 23 is separable from each other along separation lines 34. The units 23 may be completely separated from one another or the blank 20 may be divided into a pair of multiple unit sections (FIGURES 2 & 3). Additionally, a single unit 23 may be separated from the convertible tray container 50 (FIGURE 2). Once separated, the units 23, like the blank 20, may be formed into the convertible tray container 50 of the present invention, discussed in more detail below.

As best seen in FIGURES 3 and 4, the erection of the blank 20 into the convertible tray container 50 of the present invention. It will be appreciated by those skilled in the art that a description of the erection of the convertible tray container 50 also substantially describes the erection of each unit 23 or collection of units 23 upon separation from the convertible tray container 50. As such, for simplicity purposes only, the erection of only the convertible tray container 50 is discussed herein.

Initially, the outer most first side panels 24 are folded upward relative to the bottom panel 22. Then, the outer most second side panels 26 are folded in the same manner and direction as the first side panel 24. In the example embodiment, the corner flap 28 is then folded about an end of the second side panel 26. The locking tab 30 is then inserted into the side slot 42 such that an end of the locking tab 30 engages both the side slot 42 and the bottom slot 40.

FIGURES 5 and 6 depict the additional aspects of the present invention. Specifically, as best seen in FIGURE 5, the convertible tray container 50 may be used as a bottom tray, a top cap, or both. Still further, the blank 20 may be left flat and inserted between the layers of a product 52 to stabilize the product 52. Subsequently, the blank 20 may be broken down and formed into the smaller units 23 and used to carry the product in smaller quantities. The product 52 is depicted in the FIGURES may be any product 52, and is merely shown as an array of material for simplicity purposes only and is not in any way intended to limit the scope of the present invention. Suitable, non-limiting examples of products that may be used with the convertible tray container 50 includes, bulk food products, clothing, or industrial products.

The utility of the convertible tray container 50 is considerable. As discussed above, the convertible tray container 50 may be used as a cap, a base or a flat insert for a bulk shipping and display unit. In each case, the convertible tray container 50 may be broken down into separate units 23 that may also be formed and used as a cap, a base for holding various products 52 or left as a blank 20 and used as a flat insert. For example, a bulk shipment of canned soup is sent to a store and is shipped with the convertible tray container used as a cap, tray or flat insert. The store may place the entire bulk shipment out for customer use and may break the convertible tray container 50 down to smaller units 23 as the product 52 is removed. These smaller units 23 may be used by customers as trays to carry their purchases home. Conversely, the store may initially break the convertible tray container 50 down into separate units 23 or a collection of units 23 prior to presenting the product to the customer. In this manner, a smaller amount of product 52 may be presented to customers without using as much floor space, or allowing easier transport of the product 50.

While the preferred embodiment of the invention has been illustrated and described, as noted above, many changes can be made without departing from the spirit

and scope of the invention. For example, other known locking structure may be used to hold the various side panels in place. As corner locking constructions are well known in the art, their detailed description herein is not necessary to understand the invention. Accordingly, the scope of the invention is not limited by the disclosure of the preferred embodiment. Instead, the invention should be determined entirely by reference to the claims that follow.